M.R.P. 1028
S.C. III/227
14th January, 1957

AIR MINISTRY

METEOROLOGICAL RESEARCH COMMITTEE

Proposed amendments for 1957/58 to Part III of the Programme of Investigations for 1956/57 (M.R.P. 967A)

Proposed amendments to problem items and priorities are listed below. The problem numbers refer to M.R.P. 967A

Problem No.	Change proposed
III.2(a)	Insert "freezing", after "condensation"
III.2(b)(i)	Insert "and ice crystals", after "water"
III.2(b)(ii)	Insert "and ice crystal", after "drop"
III.2(d)(ii)	Raise priority to P1
III.2(d)(v)	New item:- Relation between radar echo intensity and rate of rainfall. P1
III.3(b)(ii)	Insert "and radar measurements on 'window'", after "puffs"
III.3(b)(iii)	Delete (see proposed 3(c)(iii) below)
III.3(c)	Delete P.2. Insert sub-items:- (i) Measurement of temperature fluctuations at high altitudes above 30,000 ft., using Canberra aircraft. P1 (ii) Measurement of variations in refractive index at altitudes below 30,000 ft. (by microwave refractometer in Hastings aircraft). P1 (iii) Radar echoes from clear skies ("Angels"). P1 In Remarks column against 3(c)(i) and (ii) insert "For radio propagation studies"
III.5	Raise priority to P1 In Remarks column insert "See III.3(c)"
III.7(b)	Substitute "slant" for "air-to-ground" Raise priority to PX
III.8	Amend this item to read:- Observations in the upper troposphere and lower stratosphere (see also III.3(c)(i)) (a) Temperature, water content and ozone under various conditions. P1 (b) Variation of wind in and around jet streams. PX Note: The Sub-Committee is invited to consider the suggestion that the parts (a), (b), (c) and (e) of the present III.8 and part (a) of III.10 should be omitted and a list of research items sponsored by the Gassiot Committee given as an appendix to the M.R.C. Programme of Investigations. Draft list attached.
III.10(a)	See Note under III.8
III.11	Provide for new item "Atmospheric chemistry", with sub-items and allocation of priorities as appropriate

Suggested appendix to M.R.C. Programme of Investigations (M.R.P. 1034)

Researches sponsored by the Gassiot Committee of the Royal Society

It is thought that it will assist members of the Meteorological Research Committee and of the Physical Sub-Committee, in their consideration of the Programme of Research, to be aware of the work sponsored by the Gassiot Committee. The programme of this body is concerned with the characteristics of the upper atmosphere, and includes theoretical studies, experimental studies, and the development of instruments. It thus supplements and partly overlaps the programmes of both S:C.I and S.C.III, although it is largely devoted to subjects outside the fields of these Sub-Committees.

I.	The measurement of atmospheric ozone and other gases and their relationship to meteorological conditions	
	I.1. Maintenance of a world-wide ozone survey	Sir Charles Normand and Dr. G.M.B. Dobson (Ozone Commission of the International Association for Meteorology)
	I.2. Vertical distribution of ozone; development of chemical methods	Dr. A.W. Brewer, Oxford.
	I.3. Vertical distribution of ozone; development of improved spectroscopic methods	Dr. R.M. Goody, Imperial College.
	I.4. Development of a spectrometer for use in aircraft	Dr. J.T. Houghton, R.A.E.
	I.5. Study of atmospheric constituents, including distribution of ozone, by spectroscopic methods	Dr. T.W. Wormell, Cambridge. Dr. R.M. Goody, Imperial College.
II.	Studies of atmospheric radiation	
	II.1. Theory of atmospheric scattering	Mr. D.B. Lake, Kew Observatory.
	II.2. Calculations on radiative heat - exchanges in the atmosphere	Mr. A.R. Curtis, Sheffield University.
	II.3. Analysis of atmospheric emission of radiation by spectroscopic methods	Dr. R.M. Goody, Imperial College.
III.	Laboratory and theoretical studies	
	III.1. Experimental study of molecular spectra	Professor R.W.P. Pearse, Imperial College.
	III.2. Excitation of spectra - measurement of electron optical excitation functions	Professor H.S.W. Massey and Dr. D.W.O. Heddle, University College, London.
	III.3. Study of photochemical reactions of possible importance in the atmosphere	Professor D.R. Bates and Dr. H. Mackle, Queens University, Belfast.
	III.4. The measurement of absorption cross-sections in ultra-violet region	Professor R.W. Ditchburn, Reading University.
	III.5. Theoretical study of physical processes in the upper atmosphere	Professor D.R. Bates, Queens University, Belfast.

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IV.	Observational and laboratory study of airglow and auroral phenomena	Dr. Armstrong, Armagh Observatory, Professor Bates and Professor Emeleus, Queens University, Belfast.
V.	Study of high-altitude atmospheric winds by radio methods	Mr. J.A. Ratcliffe, Cambridge.
VI.	Research using rocket-borne equipment	
	VI.1. Photometric study of night airglow and day airglow in the optical field and search for micrometeoric material by microphonic method	Professor D.R. Bates, Queens University, Belfast.
	VI.2. Study of atmospheric pressure, temperature and wind distribution: study of ionic constitution of ionised layers	Professor H.S.W. Massey, Dr. R.L.F. Boyd, University College, London.
	VI.3. Measurement of ion density	Professor J. Sayers, University of Birmingham.
	VI.4. Study of distribution of electron density	Dr. W.J.G. Beynon, University College, Swansea, and R.A.E.
	VI.5. Study of wind-structure by optical and radar methods	Professor P.A. Sheppard, Imperial College.
	VI.6. Photography of ultra-violet image of sun	R.A.E.
	VI.7. Development of a rocket-borne magnetometer	R.A.E.